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ARTICLE

Cognitive-Behavioral Therapy Model, Depression, and Return to Sports (the Role of the Technique of Using Others as a Criterion for Belief Adjustment: a Single-case Study)

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ABSTRACT: Athletes are more at risk of developing anxiety disorders, depression, and substance abuse disorders due to facing unique stresses such as balancing social life with sports and high public expectations. The cognitive-behavioral therapy model, in addition to helping athletic performance, can play a preventive role in the development of psychological disorders. This study aimed to determine the impact of the cognitive-behavioral therapy model (with an emphasis on the role of the technique of using others as a benchmark for belief modification) on depression and return to sports in an athlete with major depressive disorder. In this study, a 5-session cognitive-behavioral therapy intervention with an emphasis on the technique of using others as a benchmark for belief modification was conducted. The athlete's depression and anxiety were measured before the intervention, after the intervention, and at a 2-month follow-up stage. The results showed that the athlete progressed from severe depression and moderate anxiety in the pre-test stage to mild depression and anxiety in the follow-up stage, indicating the positive role of the cognitive-behavioral therapy model (with an emphasis on the technique of using others as a benchmark for belief modification) in reducing depression and anxiety in athletes. In the technique of using others as a benchmark for belief modification, the athlete looks at the adaptive beliefs of real successful individuals and distances themselves from their maladaptive beliefs. In other words, if athletes can realistically see and understand how to apply adaptive beliefs in other successful individuals who have been in similar or even much more difficult situations, they will take action to modify their maladaptive beliefs.

KEYWORDS: anxiety, depression, cognitive-behavioral therapy, maladaptive beliefs, athlete.

1 Introduction

In the Cognitive Behavioral Therapy (CBT) model, there is always an emphasis on individuals' thoughts and beliefs. This means that people interpret events based on perspectives they have learned through their environment, experiences, and significant others, and then respond to those events with behavioral, emotional, or physiological reactions. According to the CBT model, beliefs have different levels, the first of which are automatic thoughts. Automatic thoughts actually include positive and negative

thoughts, images, and components of the thought process that come to a person's mind in a specific situation, and individuals are usually more aware of the emotions resulting from them than the thoughts themselves. At deeper levels, there are intermediate beliefs (including rules, attitudes, and hypotheses) and then fundamental beliefs. These beliefs include often deep and detailed ideas and descriptions that a person has about themselves, others, and the world. Challenging intermediate and fundamental beliefs is much harder than challenging automatic thoughts.

In sports, athletes' beliefs are influenced by their childhood, family, significant others, coaches, and environment. Athletes have unique beliefs about themselves, others, the world, and the future. Sometimes these beliefs are inconsistent, unhelpful, and destructive, affecting their athletic performance. The cognitive-behavioral therapy model helps athletes manage performance anxiety, negative thoughts, and self-doubt. This model teaches appropriate coping strategies to enhance athletes' focus, motivation, and confidence. Additionally, since the cognitive-behavioral therapy model emphasizes modifying individuals' inconsistent beliefs, it can aid in the rehabilitation of sports injuries by strengthening positive thinking and resilience in athletes. Another application of the cognitive-behavioral therapy model is teaching stress management techniques and coping skills to athletes to help them adapt to the pressures of training, competition, and external stressors. Furthermore, sleep management, promoting a healthy lifestyle, goal setting, and time management are other applications of the cognitive-behavioral therapy model in sports that enhance athletes' quality of life and athletic performance.

Moreover, the results of some studies indicate that collegiate and professional athletes are more at risk of developing anxiety disorders, depression, and substance use disorders due to facing unique stresses such as balancing social life with sports and high public expectations. Therefore, the cognitive-behavioral therapy model, in addition to helping athletic performance, can play a preventive role in the onset of psychological disorders.

The cognitive-behavioral therapy model is essentially a structured educational model that helps athletes identify their maladaptive beliefs at various levels (automatic thoughts, intermediate beliefs, and core beliefs) and then evaluate these beliefs using various cognitive-behavioral techniques, ultimately adopting appropriate and adaptive responses. Teaching athletes to identify and evaluate automatic thoughts is easy and occurs in the initial sessions. However, the challenge lies in dealing with intermediate and core beliefs, which are the deepest layers of beliefs. Given the emphasis of the cognitive-behavioral therapy model on individuals' beliefs, a general question can be raised: Can beliefs be changed? If we respond immediately, the answer is no, but if we reflect on it, we can answer yes to this question.

In psychological texts, the term "belief modification" is used more often than "belief change" (2,1). This means that beliefs cannot be changed all at once; rather, the issue is their modification, and repeated modifications of beliefs may lead to their change in the long run. Generally, modifying automatic thoughts is easier, while modifying intermediate and fundamental beliefs is more challenging. After training athletes to identify and evaluate automatic thoughts, one suitable method for modifying athletes' maladaptive intermediate beliefs is the technique of using others to modify beliefs. In fact, when individuals observe the adaptive beliefs of others, they distance themselves from their maladaptive beliefs. In other words, if athletes can realistically see and understand how successful individuals, who have been in similar or even much more difficult situations, apply adaptive beliefs, they will take action to modify their maladaptive beliefs. One of these methods is watching films based on reality or real sports documentaries. For example, Mr. Sajad Ganjzadeh, the 2020 Olympic karate champion, suffered a fracture in the palm of his hand during

the last training session before the Olympics, a fact known only to the team's technical staff (IRIB News Agency, August 7, 2021; news code: 31865552).

After winning the gold medal and the news of his broken hand, when a sports host asks him how he won the gold medal with a broken hand and what he did mentally, he replies: "It might sound funny, but in some movies, you really see it. Now, I try to watch war movies and movies based on true stories..." In his interview, he refers to watching the movie "The Revenant," stating that, inspired by the film, despite his serious injury, he instilled in himself the belief to fight more determinedly and focused. Also, during the national football team's training camps in 2014, some media outlets reported the screening of epic films or films like Saving Private Ryan at the national football team's camp (Khabar Varzeshi, July 23, 2018; news code: 168003). In fact, in this method, the athlete or client, with a dynamic perspective, seeks to identify and capture the compatible beliefs of the film's hero, and as a result, distances themselves from their incompatible beliefs and adjusts them with new beliefs. Considering the mentioned points and the high risk of athletes developing psychological disorders, as well as the role of the cognitive-behavioral therapy model in treating psychological disorders This study aimed to determine the impact of the cognitive-behavioral therapy model (with an emphasis on the role of the technique of using others as a benchmark for belief adjustment) on depression and return to sport in an athlete with major depressive disorder.

2 Methods

2.1 Participants

The client is a 32-year-old male mountaineer with a history of climbing high peaks in Iran, such as Damavand (the highest peak in Iran at 5610 meters), Alam Kuh (at 4850 meters), and Sabalan (at 4811 meters). The client contracted COVID-19 in late summer 2020. In the first few days, he quarantined himself at home and underwent home treatment, which gradually worsened his condition. After 4 to 5 days of symptom onset, he was hospitalized with 80% lung involvement. According to the client, he was hospitalized for 11 days, during which he lost consciousness only once or twice and had less than 2 hours of sleep per day. After that, he rested at home for 10 days, and even with the use of sleeping pills (prescribed by the treating physician), he managed to sleep only up to 3 hours per day. After discharge, he was treated with Pyrfenidone 200, Colchicine, and an anti-allergy spray. The client also had no history of visiting a psychologist or psychiatrist.

2.2 Measurement and Tools

Beck Depression Inventory; this questionnaire is one of the most commonly used self-report questionnaires for measuring depression. It consists of 21 questions and is scored on a four-point Likert scale from 0 to 3. The minimum score on this questionnaire is 0 and the maximum score is 63. A score between 20 and 28 indicates moderate depression, while a score of 29 and above indicates severe depression. The psychometric properties of this questionnaire have been validated in studies conducted on the Iranian population (5).

Beck Anxiety Inventory; the 21-item Beck Anxiety Inventory is one of the most commonly used self-report questionnaires for measuring anxiety and is scored on a four-point Likert scale from 0 to 3. The minimum score on this questionnaire is 0 and the maximum score is 63. A cutoff score of 16 to 25 indicates moderate anxiety, while a cutoff score of 26 and above indicates severe anxiety. The psychometric properties of this questionnaire have been validated in studies conducted on the Iranian population (6).

2.3 Implementation Method

The therapeutic program was designed according to the cognitive-behavioral therapy model presented in the book "Cognitive Therapy: Basics and Beyond" by Judith Beck (1). It was implemented over 2 months and in 5 sessions. Follow-up assessments were conducted before the cognitive-behavioral therapy intervention, after the intervention, and 2 months after the last session. In this cognitive-behavioral model program, clients are taught to identify automatic thoughts, recognize emotions, evaluate automatic thoughts, and identify and assess intermediary and fundamental beliefs. In the presented program, the technique of using others as a standard for belief modification was emphasized.

In this technique, conditions are created for the athlete or client to see and understand the application of adaptive beliefs in other successful individuals who have been in similar or even much more challenging situations than theirs. In fact, when individuals observe the adaptive beliefs of others, they distance themselves from their own ineffective beliefs and can thus adjust their maladaptive beliefs. In this study, the documentary film "Meru" was used to create these conditions.

Documentary: Meru

The film "Meru" depicts the struggle of three climbers named Conrad Anker, Jimmy Chin, and Renan Ozturk on the difficult and unclimbable Shark's Fin (Meru) peak in a remote area of the Indian Himalayas. Meru is not just a mountain; it is a massive wall, and in its most challenging sections, climbers can only ascend about 60 to 100 meters in a day. Meru has three peaks: the southern, central, and northern.

The Shark's Fin Peak (which resembles a shark's fin) is located in the central region. The 1,400-meter granite climbing route is highly technical and completely challenging, and this peak in the Indian Himalayas had remained unclimbed despite the repeated attempts of climbers. To ascend Mount Meru (Shark's Fin), a climber must be a professional mixed climber, meaning they must have professional mastery in ice climbing, mountaineering, and rock climbing simultaneously.

In October 2008, Conrad Anker, Jimmy Chin, and Renan Ozturk, led by Conrad Anker, set out to climb Meru, which had a reputation for being an impossible ascent. The first seven days of the climb were marked by difficult terrain, night progress, sleeping on snow, avalanche crossings, and being caught in a storm, during which half of the group's supplies were depleted. In other words, 90 percent of the remaining mountain route had to be traversed with half the supplies, leading to severe food rationing as another hardship for the group. Nevertheless, the group continued their ascent, accepting the ultimate risk. After 16 days, progress slowed significantly, and supplies were nearly exhausted. On the seventeenth day, at an altitude of 6,100 meters, in extreme cold and numbness of hands and feet, as well as snow and ice showers, colds, and skin fungus, the group accepted their unsuccessful and failed ascent and turned back.

Three years later, after facing various unfortunate, threatening, and unpredictable events, including Renan Ozturk's brain injury (doctors believed he would never even walk normally again, but with astonishing willpower, he prepared himself for the ascent five months after the injury), all the group members once again set out to conquer the dangerous and deadly Meru peak in 2011. They displayed an incredible effort and, after a difficult journey over 11 days, they successfully summited Meru.

Treatment protocol

The following principles were considered over 5 therapy sessions according to the cognitive therapy model from the book "Cognitive Therapy: Basics and Beyond."

1. ShangriLa by Russian V Babanov (Solo) in Sep-Oct 2001.
2. The Japanese Hanatani/Kuroda/Manome/Okada, Oct 2006
3. The Czechs Holecek and Kreisinger - Oct 2006.
4. The Shark's Fin - first climbed by C Anker, J Chin & R Ozturk - Oct 2011

Principles and structure of meetings
-Introducing and familiarizing the client with the treatment process
-Assessment of emotion and mood
-Client participation in the therapy and counseling process and the use of summarization and feed-back principles
-Determining assignments and home activities with the participation of the clients
-Use of the activity monitoring chart
Training in the principles of cognitive-behavioral therapy
-Identifying and evaluating thoughts (using evidence review techniques and cognitive continuum technique)
-Teaching the abdominal breathing technique
-Emphasis on the technique of using others as a criterion for belief adjustment (Maro documentary)
-Presenting assignments related to the documentary and discussing the documentary
-Assignment to gather more information about the documentary characters

3 Results

Using the conducted assessments and the report worksheet for case history writing, the diagnoses in Table 1 were presented to the patients. Alongside referring the patients to a psychiatrist, cognitive-behavioral therapy was also taught to them.

Table 1. Psychiatric Diagnosis

Psychiatric diagnosis based on the case report worksheet:
Axis 1: Depression and Anxiety Disorders
Axis 2: No personality disorder
Axis 3: Coronavirus Disease
Axis 4: Economic factors have caused sensitivity in the references.

Axis 5: General performance level: 60 (The presence of moderate symptoms of depression and anxiety and moderate difficulties in occupational and social functioning)

In Table 2, the clients' problems are extracted based on semi-structured interviews.

Table 2. Client Issues

Client Issues
-Current problems and challenging situations -Signs of depression (low mood, lethargy and fatigue, disinterest) -Change in sleep patterns includes going to bed late and sleeping for less than 2 hours in a 24-hour period. -Anxiety and fear regarding recovery from COVID-19 (including recovery of the lungs, sense of smell and taste, and internal unpleasant feelings such as lung adhesions and gastrointestinal problems) -Difficulty in attention and concentration -Lack of interest and inability to go to work -Lack of interest and inability to engage in physical activity and exercise

In the following, Table 3 presents spontaneous thoughts, intermediary beliefs (including rules, conditional beliefs), fundamental beliefs, and strategies.

Table 3. Table of Thoughts, Beliefs, and Strategies

Spontaneous thoughts, feelings, and typical behaviors in these situations
-I think I'm going to die (feeling of sadness and hopelessness), behavior of withdrawal and crying. -The world no longer holds any value for me (feeling of sadness and hopelessness). Behavior of withdrawal and crying. -My children become orphans (feeling sad and hopeless) exhibiting withdrawn behavior and crying. -I'm not getting better (feeling sad and hopeless) behavior of withdrawal and crying. -I wish I had gone to the doctor when I got COVID; I delayed going, and my lungs were damaged (feelings of sadness, regret, and guilt). I have been withdrawn and thinking a lot about the past. -I was very careless. I had heard that Yavar (his friend) had contracted COVID-19. I shouldn't have gone to the hall with him. (Feelings of sadness, regret, and guilt) Behavior of withdrawal and excessive thinking about the past. -I was discharged from the hospital too early; they should have kept me (feeling of anger and upset). Verbal aggression. -They don't understand my pain, I'm dying, my lungs are sticking together, they are not my Popeye (feeling worthless), verbal arguments and self-loathing.

-The doctors don't realize, my lungs are gone (feeling angry and hopeless) reassurance-seeking and checking behavior.

-I have to go abroad for surgery, and my lungs need to be transplanted, otherwise, I'll die (feeling confused and hopeless). Checking and reassurance behavior.

Fundamental beliefs

-I am powerless.

-The future doesn't hold anything good for me.

-About death?? (Even the references are doubtful) I might die young.

-I am not valuable.

Conditional beliefs

-If Iran's facilities were good, we wouldn't have all this suffering regarding COVID-19.

-If I want to get better, the best thing to do is to go abroad.

-If I were supposed to get better, I would have gotten better by now.

-When I can't handle things well, it means I've lost.

Rules (beliefs that the individual has established about themselves and others)

-Since one of my close relatives passed away, I think I will also come out of this predicament safely. I can't (the patient says the gene probably affects COVID-19).

-Every task should be done well.

Compensatory and coping strategies

-Avoidance

-Self-blame

-Rumination

-Reassurance

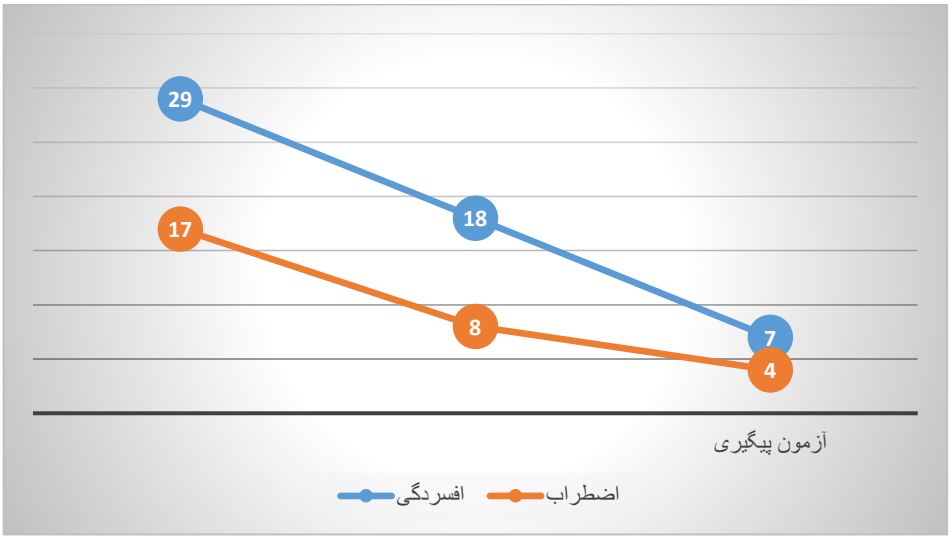

Chart 1. Changes in depression and anxiety scores of the participants from the pre-test phase to follow-up

5. Discussion and Conclusion

This study aimed to determine the impact of the cognitive-behavioral therapy model (with an emphasis on the role of the technique of using others as a benchmark for belief modification) on depression and the return to sports for an athlete with major depressive disorder. The subject in this study was a 32-year-old male mountaineer with a history of climbing high peaks in Iran, who contracted COVID-19 in 2020 with 80% lung involvement and was discharged from the hospital after 11 days of hospitalization, subsequently receiving home treatment. After the interview and using the psychiatric history report form, the subject was diagnosed with depression and anxiety disorder. Alongside psychiatric treatment, a five-session cognitive-behavioral therapy intervention emphasizing the technique of using others as a benchmark for belief modification was conducted. The main issues presented included symptoms of depression (low mood, lethargy and fatigue, lack of interest), changes in sleep patterns (falling asleep late and sleeping less than 2 hours per day), anxiety and fear regarding recovery from COVID-19 (including recovery of the lungs, sense of smell and taste, and internal unpleasant feelings such as lung adhesions and gastrointestinal problems), lack of interest and inability to return to work, lack of interest and inability to engage in physical activity and sports, and difficulty in attention and concentration.

In order to address each of these issues, therapeutic goals were designed and addressed during the sessions. Among the tasks presented in line with these goals during the sessions were: visiting a psychiatrist, searching and researching from credible sources (online or specialists) about lung strengthening strategies, conducting activity monitoring logs, starting a daily walking program with a specific plan (recording the duration and distance of walking through mobile apps), visiting herbal shops and purchasing herbal teas, starting a running program (the program included jogging, time-based games, and intensity-based games), and other therapeutic programs, filling out the ineffective thought record sheet, implementing belief modification techniques, watching the documentary "Mero," and tasks related to the documentary "Mero."

During the sessions, the client was taught the principles of cognitive therapy. They learned to identify emotions, recognize and evaluate automatic thoughts, and identify and evaluate intermediary and fundamental beliefs. Then, in sessions 4 and 5, the technique of using others as a benchmark for belief adjustment was emphasized. The documentary "Meru" was used for this technique. The documentary "Meru" tells the true story of three professional climbers' attempt to ascend a wall called Shark's Fin in the Himalayas. The Shark's Fin wall is renowned in the climbing world as an impossible ascent, and the documentary was produced over a period of about four years. This astonishing true ascent story begins in 2008 and ends in failure that same year. After that failure, each of the climbers experienced tragic and unbelievable events. After three and a half years, the group decided to attempt the impossible ascent again in 2011 and, astonishingly, succeeded. After watching the documentary and completing the related assignments, the client, who had learned the principles of cognitive-behavioral therapy and was familiar with the concept of identifying and evaluating beliefs, adjusted their beliefs with the help of the counselor, drawing inspiration from the adaptive beliefs of the successful individuals in the documentary.

For example, in cognitive-behavioral therapy sessions, the client stated: "This documentary reminded me of something. I had forgotten that I am a climber. When I was researching these sports heroes, I saw an interesting quote from a climber: 'When we can't climb a peak, that peak remains the same, but the climber has the opportunity to go and come back stronger.'" After this statement, with the help of the therapist, the maladaptive belief "If I don't do things well, it means I've lost" was extracted from the list of beliefs, and the client modified it as follows: "If I don't succeed at something, it doesn't mean I'm a loser. I have the opportunity to try again and, if necessary, prepare myself." In another example, the client stated: "When I

watched the documentary, the character of Renan was very interesting to me. How can a person with a spinal cord injury, after all the doctors tell him that in the best case, if he gets better, he can only walk, prepare himself and climb after 5 or 6 months! He had a very interesting quote after the injury: 'In my mind, there was a constant battle!' This quote was very interesting to me. I didn't think that way! A constant battle! In my mind, it was always misery."

After this statement, with the help of the counselor, the incompatible belief "If I were meant to get better, I would have by now" was extracted from the list of beliefs, and the client modified it as follows: "I give myself time to try to get better. It's like a battle." Therefore, by watching this documentary and completing the tasks related to searching for the characteristics of these climbers, the client sees very successful individuals who, in conditions far worse than their own, have managed to free themselves from their predicaments with effective beliefs. This causes the client or athlete to dynamically seek to identify and capture the compatible beliefs of the film's heroes, resulting in the individual distancing themselves from their incompatible beliefs, modifying them, and replacing them with new beliefs.

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